Design Science Research as practiced in the Business Engineering Research Program of the Institute of Information Management

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A: Introduction: the setting

A single case: University St. Gallen?
Can it be generalized?
Is it of common interest?
The University of St. Gallen at a Glance

- Founded in 1898 as one of the first Business Schools in Europe
- Public University, Canton of St. Gallen

- 5’000 students including 1’300 international students (25%) from 64 countries, and 1’300 female (28%)
- 24 Research Institutes, 7 Research Centers, 100 Spin-Offs
- 80 Tenured Professors, 56 Assistant Professors, 230 Lecturers (mostly from practice), 180 Administrative Staff
- Ranked by students, managers and the media as a leading Business School in German-speaking Europe
Transformation:
Top-ranked: through reputation for A, B or A&B?

A: Relevance, but …

B: Rigor, but …

Accreditation: AACSB, EQUIS, …

Globalization: Anglo-Americanization
Transformation to: Bachelor & Master Programs

**Title:** Bachelor of Arts (B.A.HSG), Master of Arts (M.A. HSG)

**Assessment Year:** Highly integrated 1st year

5 Bachelor Majors: Business, Economics, Law, Law & Economics, International Affairs

10 Master Programs: Accounting & Finance, Banking & Finance, Business Innovation (Information, Media & Technology Management), Marketing, Services & Communications Management, Strategy & International Management (English), Economics, Quantitative Economics (English), International Affairs & Governance, Legal Studies, Law & Economics
Transformation in process:
Doctoral/Ph.D. programs

• 14 doctoral programs in **Business Administration**, Economics, International Affairs/Public Governance and Law
• Doctoral program in Multicultural Management (in English)
• Ph.D. program in Economics and Finance (in English)
• 800 doctoral students, some 60% foreign students
• 130 doctoral graduates
• on request: dissertation in foreign languages
Master and Doctoral Program
„School of Business Innovation“

12 Professors
23 Ass. Professors
86 Project Mgrs.
100 Ph.D.& DBA Stud.
100 Student Research Assistants
15th European Conference on Information Systems

Tracks
- IS Research Methodologies
- IS and Transformation
- IS/IT Management
- IS Development
- Organizational & Enterprise Engineering
- E-Business
- Information and Knowledge Management
- Information Systems and Economics
- IS Security & Risk
- Mobile & Emerging Technologies for IS
- E-Work
- Logistics, Manufacturing and IS
- Financial Services and IS
- Public Sector and IS
- Information Industry and IS
- Tourism, Culture and IS

Timeline
- AUGUST 2006: Submission of papers starts
- NOVEMBER 15, 2006: Deadline for submission of papers
- JANUARY 31, 2007: Deadline for submissions to doctoral consortium
- FEBRUARY 26, 2007: Notification of acceptance
- MARCH 25, 2007: Deadline for submission of the final papers
- JUNE 04-06, 2007: Doctoral consortium
- JUNE 07-09, 2007: ECIS 2007

«Relevant rigour – Rigorous relevance»
St. Gallen, June 07-09, 2007

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Brief Clarifications

Relevance

• Sustainable results for local solutions
• Applicability in practice: in problems of business organizations

Rigor

• Solutions can be generalized
• While involved in practice, still keep integrity, scient. distance, objectivity
The root cause of today’s crisis in management education, assert Warren G. Bennis and James O’Toole, is that business schools have adopted an inappropriate and ultimately self-defeating model of academic excellence. Instead of measuring themselves in terms of the competence of their graduates, or by how well their faculty members understand important drivers of business performance, they assess themselves almost solely by the rigor of their scientific research.

Competitiveness of Nations: Knowledge Economy, Education Industry

Economic Growth through Innovation (K-Transfer)
B: Outline

1. Illustration: Competence Center Model
2. Assessment: Theory based (DS, KT)
3. Implications: Role of Acad. Researcher (BE)
4. Vision
Vision for USG & CityU Common Research: 6C-Model 😊

GLOCAL in Flattening Worlds

Topic: ...........................

Results: ...........................
B: Outline

1. Illustration: Competence Center Model
2. Assessment: Theory based (DS, KT, BE)
3. Implications: Role of Acad. Researcher
4. Vision
Later, see Photo of Whiteboard Sketch
Provided with additional readings, such as:

- Our paper „Engaged Research“ (Work on Progress)
- Design Science Journal Article
- HBR Article: How Business Schools lost their way
Profile of the Institute of Information Management

Prof. Dr. A. Back
- E-Learning
- Knowledge Worker Productivity
- Workplace Collaboration
- Knowledge Networks

Prof. Dr. W. Brenner
- Integrated Information Management
- Customer Knowledge Management

Prof. Dr. H. Österle
- Business Networking
- Sourcing

Prof. Dr. R. Winter
- Information logistics
- Integration and Architecture Management
- Methodology and Modelling

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Example: CC Knowledge Networks

A “cross-cultural” collaborative CC

Institute for Management
Prof. Dr. Georg von Krogh

Institute of Information Management
Prof. Dr. Andrea Back

CC Knowledge Networks for Growth

Network of researchers:

Scientists: 1 Project Manager (typically Assistant Professor):
5 Research Assistants (PhD candidates)

Practitioners: Participants from 4-5 companies
Elements of Competence Center: A wider view

- Conference
- Visiting Chair
- Academic Research Partnerships
- Joint Research
- Staff Exchange
- K-Transfer
- Corporate Research Partnerships
- KnowledgeSource
- Unilever
- IBM/Lotus
- Hewlett-Packard
- Daimler-Chrysler
- Rose
- @vantage
- Ramp-up project
- Public Research funds

Elements of Competence Center:
- A wider view

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Elements of Competence Center: A narrower view (partner companies)

Networking

Requirements

Frame-work 1.0

Frame-work 2.0

Assessment/ Cases

Method 1.0

Method 2.0

Bilateral Projects 1

Bilateral Projects 2

Handbook

1st Year

2nd Year

Workshop 1

Workshop 2

Workshop 3

Workshop 4

Workshop 5

Workshop 6

Advisory Board Meeting 1

Advisory Board Meeting 2

Advisory Board Meeting 3

Advisory Board Meeting 4

Advisory Board Meeting 5

Advisory Board Meeting 6

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Two-day Competence Center Workshops

- E.g. Process Modelling
- Interactive Work in Breakout Groups
- E.g. Measures to be taken

Quick Wins for practitioners as well as longer term contribution to knowledge body of researchers
Snapshot of results categories of CC-work

1. Reference (Descriptive Model)
   - Perspectives for our Partners Vol. 1: Innovation, Knowledge Creation, Customer Integration and New Ventures – An Overview
   - Perspectives for our Partners Vol. 2: Mergers and Acquisition Integration – Barriers and Enablers

2. Workshops
   - 18.01: Kick off Workshop
     Result: Definition of the research areas
   - 3/4.04: First CC Workshop
     Results: Development of the research map and the project plan for the first year
   - 2/3.07: Second CC Workshop
     Presentation of the results of the research in New Ventures, Preparation of the research in Customer Integration

3. Bilateral Project Support
   - Unilever 1: Organizational conditions for New Ventures
   - Hewlett Packard 1: Customer Integration
   - RWE 1: Mergers and Acquisition Integration
   - Ernest & Young 1: Mergers and Acquisition Integration through KNN

4. Support of new partners
   - Presentation of KNN for the KM Community of Ernest & Young
   - Awareness Workshop for RWE Employees at 6/7. June
   - Awareness Workshop for Ernst&Young in June

Knowledge Networks
“The Secret Garden”
B: Outline

1. Illustration: Competence Center Model
2. Assessment: Theory based (DS, KT)
3. Implications: Role of Acad. Researcher (BE)
4. Vision
Assessing Rigor (of “relevant” research):
Theory of Design Science Research

Hevner et al./Design Science in IS Research

Defined as problem solving paradigm

Design and/or change reality (complementary to behavioral science (comprehend reality))

Knowledge generation through building and application of the designed artifact

→ 7 guidelines for effective DS
Assessment Criteria/Guidelines

1. Creation of an innovative, purposeful artefact

2. For a specified problem area

3. Utility for the specified problem (thorough evaluation)

4. Novelty (solving an unsolved problem, or a known one in a more effective or efficient manner)

5. Artefact itself must be rigorously defined, formally represented, coherent, and internally consistent

6. … problem space is constructed and a mechanism … to find and effective solution

7. Results must be communicated effectively: technical audience (Research, Practitioners) managerial audience (Decision on implementation)
The CC-Model and your Model in your View:
- Radical Thinking / Vision
- Constructive Criticism?
Assessing Relevance: Theory: Effective Knowledge Transfer (Theory Prof. Dr. G. v. Krogh et al.)

Initiation Phase

Knowledge Flow Phase

Integration Phase

Not covered in this lecture → see journal paper draft, upcoming version
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<thead>
<tr>
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<th>Outline</th>
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<tbody>
<tr>
<td>1</td>
<td>Illustration: Competence Center Model</td>
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<td>4</td>
<td>Vision</td>
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### Assessing Role/Future of Researcher: Theory: Method Engineering (Business Engineer.)

A method is described with the elements: *(a method is a type of IT-artifact („neglected“ by Design Science))*:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Construction tasks with certain results, e.g. document</th>
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<tbody>
<tr>
<td>Role</td>
<td>A combination of activities to be performed by a person</td>
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<tr>
<td>Specification Document</td>
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<td>Meta Model</td>
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<td>Technique</td>
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Questions: Role of „Engaged“ Researcher

• **Who** is taking on roles? (persons, organizational units of involved organizations) (Who is at the academic organization, and who is in the field organization?)

• **What activities** are in the job description of this role? Who is responsible for what?

• **In which order** to these activities have to be performed? (proposal writing – acquisition negotiations – project management – scientific writing - …). What events trigger which activities?

• **What types of results** are the outcome of these activities?

• **What performance/quality goals** are imposed on the engaged researcher by academia, practice?

• **What are the competencies needed** for the engaged researcher to perform these activities and produce good quality results?
Business Engineering as Reference Framework: Model & Methods based: → Method Engineering

Baumöl, 2004;42
The Role of the Researcher in your View:
- Radical Thinking / Vision
- Constructive Criticism?

THANK YOU!